WHAT WE CLAIM IS:

1. A multilayer thin film formed on an Si substrate by epitaxial growth, which comprises:

a buffer layer formed on said Si substrate, which layer includes an oxide thin film,

a perovskite oxide thin film formed on said buffer layer, which film has a (100) or (001) orientation, and

a ferroelectric thin film epitaxially grown on said perovskite oxide thin film.

2. The multilayer thin film of claim 1, wherein said perovskite oxide thin film has insulating properties.

3. The multilayer thin film of claim 1, which has an electrically conductive thin film between said perovskite oxide thin film and said oxide thin film in said buffer layer.

4. The multilayer thin film of claim 1, wherein said perovskite oxide thin film comprises $PbTiO_3$.

5. The multilayer thin film of claim 1, wherein said ferroelectric oxide thin film comprises PZT.

6. An electron device comprising a multilayer thin film as recited in claim 1.

7. A multilayer thin film fabrication process by:

forming a buffer layer including an oxide thin film on an Si (100) substrate,

epitaxially growing a perovskite oxide thin film having a (100) or (001) orientation on said buffer layer, and

epitaxially growing a ferroelectric thin film on said perovskite oxide thin film.